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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/591,006

08/28/2006

Katsuyuki Torii

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EXAMINER

BELOUSOV, ALEXANDER

ART UNIT

PAPER NUMBER

2894

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/591,006	Applicant(s) TORII, KATSUYUKI	
	Examiner ALEXANDER BELOUSOV	Art Unit 2894	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7-11 is/are pending in the application.
- 4a) Of the above claim(s) 7-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the amendment filed on 09/22/2008. Currently, claims 1-4 have been examined.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim(s) 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claim limitations of “a first region, in which said third semiconductor region occupies said second semiconductor region at a first rate, is formed at a center of said semiconductor base, and a second region, in which said third semiconductor region occupies said second semiconductor region at a second rate larger than said first rate, is formed at a circumference of said semiconductor base so as to enclose said first region”, are cited as **misdescriptive** (see MPEP 1503.01). In the description of FIG. 1, the Applicant discloses two sizes for the **regions 14** (claimed as “third region”). The smaller **regions 14** are located in the center of the device. The larger **regions 14** are located on the periphery of the device. This is in a stark contrast to claim 1, where Applicant claims **a single region** (that has a small size in the middle of the device and a large size on the periphery of the device).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claim(s) 1-4** are rejected under 35 U.S.C. 102(b) as being anticipated by (JP-2004-228553) by Torii et al (“Torii”).

Regarding claim 1, Torii discloses in FIG. 2 and related text (official translation is included with this action), **e.g.**, a semiconductor device, comprising:

a semiconductor base (11-14) comprising a first semiconductor region (11) having a first conductivity type, a second semiconductor region (13) having a second conductivity type formed in a specific surface region of said first semiconductor region (it is ***specific***, because it is formed only in a specific part of the first semiconductor region), and a third semiconductor region (14) having the first conductivity type formed in a specific surface region of said second semiconductor region (it is ***specific***, because it is formed only in a specific part of the second semiconductor region); and

a first electrode (31) formed in a surface region of said second semiconductor region sandwiched between said first semiconductor region and said third semiconductor region,

wherein: a first region (inner portion of 14), in which said third semiconductor region occupies said second semiconductor region at a first rate (area), is formed at a center of said semiconductor base, and

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a second region (outer portion of 14), in which said third semiconductor region occupies said second semiconductor region at a second rate (volume) larger than said first rate, is formed at a circumference of said semiconductor base so as to enclose said first region.

Regarding claim 2, Torii discloses in FIG. 2 and related text, **e.g.**, there are a plurality of said third semiconductor region (14), which are formed to be spaced from each other.

Regarding claim 3, Torii discloses in FIG. 2 and related text, **e.g.**, said second semiconductor region (13) is formed in a belt shape (see FIG. 1(b)).

Regarding claim 4, Torii discloses in FIG. 2 and related text, **e.g.**, a plurality of said second semiconductor region (13), which are formed side by side with a space therebetween (see FIG. 1(b)).

Response to Arguments

1. Applicant's arguments filed on 09/22/2008 have been fully considered but they are not persuasive.

2. **Regarding claim 1**, the Applicant argues on page 9, top of the page, that "Applicants were unable to locate any teaching in this reference regarding a second region formed such that it encloses a first region".

Please see rejection of claim 1, and the FIGs. 1 & 2 of Torii. More specifically, as the Examiner has stated in his rejection, the Examiner considers the first region to be the "inner portion" of 14, and the second region to be the "outer portion" of 14. This is actually can be better seen in FIG. 1, which shows the top view. So, the "inner portion" of 14 is a small region in the center of FIG. 1, 14. The "outer portion" of 14 would be like a **ring** around the "inner portion". A **ring** definitely encloses an "inner portion". Since the word "region" is very broad,

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the Torii reference reads on the Applicant's invention as *claimed*.

3. **Regarding claim 1**, the Applicant argues on page 6, bottom of the page, that "the Examiner appears to be placing undue emphasis on *technical, non-prior art rejections*... applicants are their own *lexicographers* ... etc".

The Examiner's concern with the claim limitations cited in the 112 2nd paragraph rejection is not for "technical" reasons. The Examiner's concern is that the claim limitations *do not match* the disclosed invention. As has been stated above, in the description of FIG. 1, the Applicant discloses two sizes for the **regions 14** (claimed as "third region"). The smaller **regions 14** are located in the center of the device. The larger **regions 14** are located on the periphery of the device. This is in a stark contrast to claim 1, where Applicant claims **a single region** (that has a small size in the middle of the device and a large size on the periphery of the device. The word "region" can not be interpreted to describe disconnected structures. The word "region" is always a *single* structure. Hence, the claim limitations *do not match* the disclosed invention. The rejection is maintained.

On a separate note, the Examiner withdraws the objection to Drawings and the 112 2nd paragraph rejections.

Conclusion

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Belousov whose telephone number is 571-270-3209. The examiner can normally be reached on Monday - Thursday 7:30AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Nguyen can be reached on 571-272-2402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alexander Belousov/
Examiner, Art Unit 2894

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01/02/2009

/Kimberly D Nguyen/

Supervisory Patent Examiner, Art Unit 2894